

FIG. 1

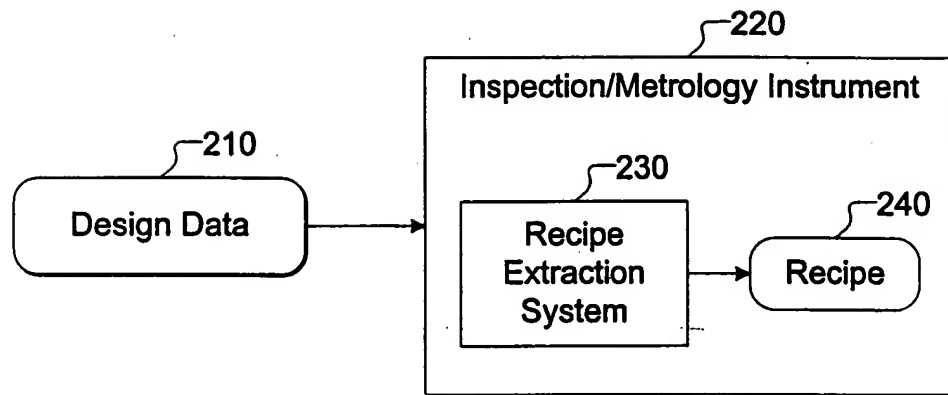


FIG. 2

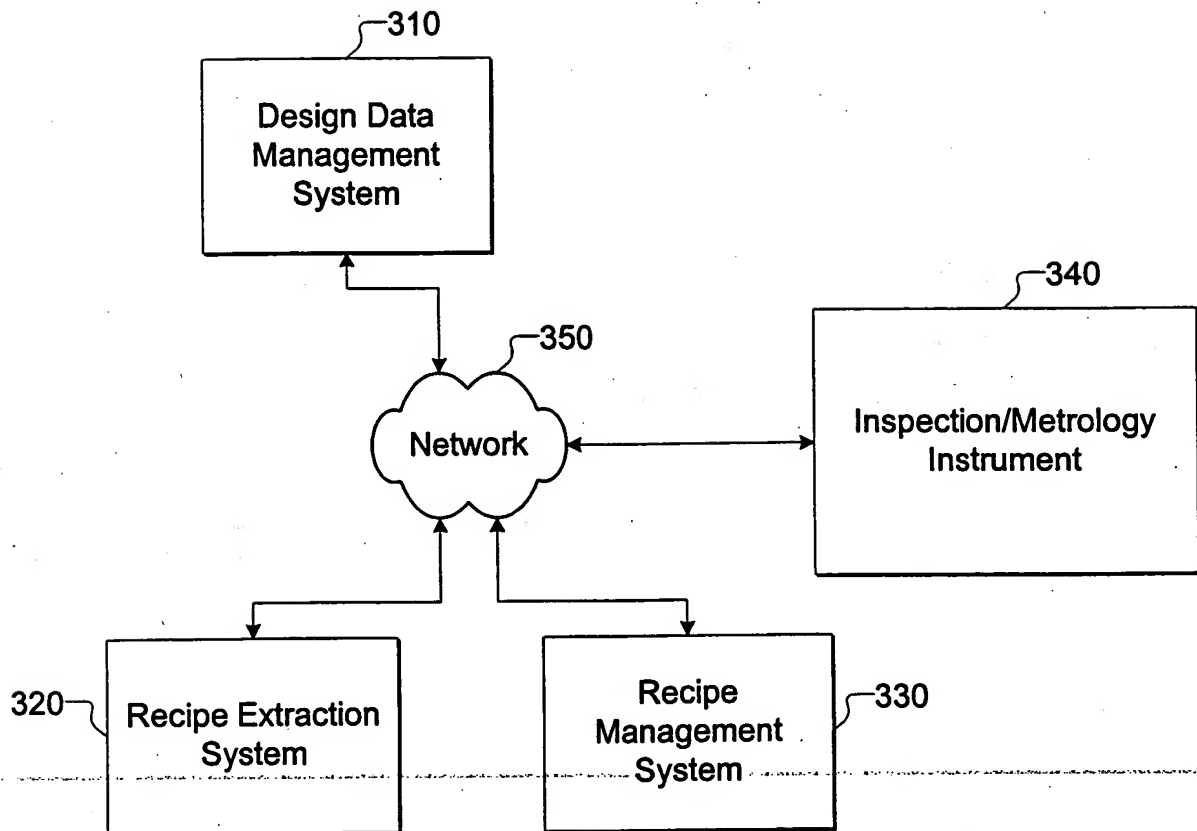


FIG. 3

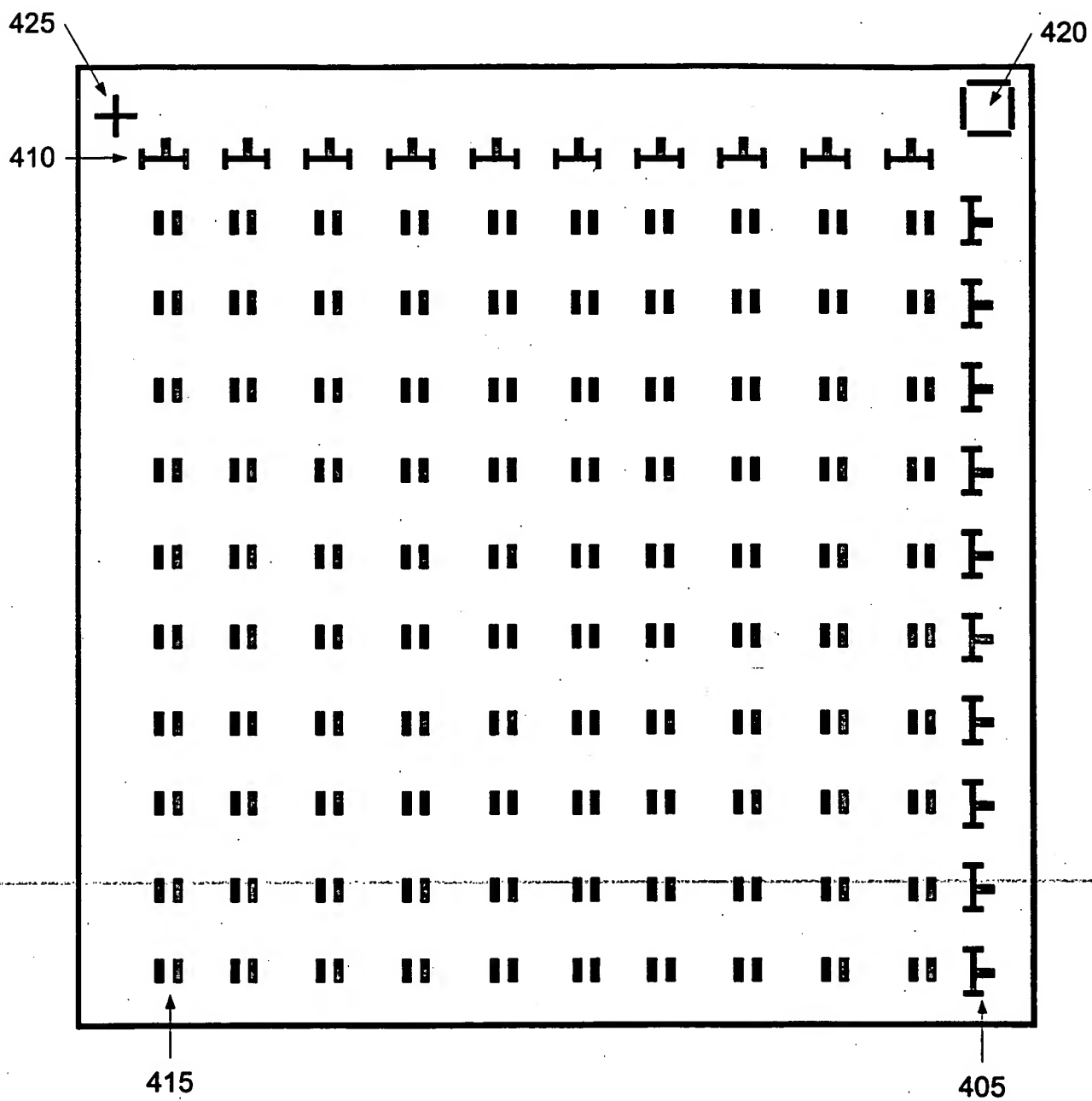


FIG. 4

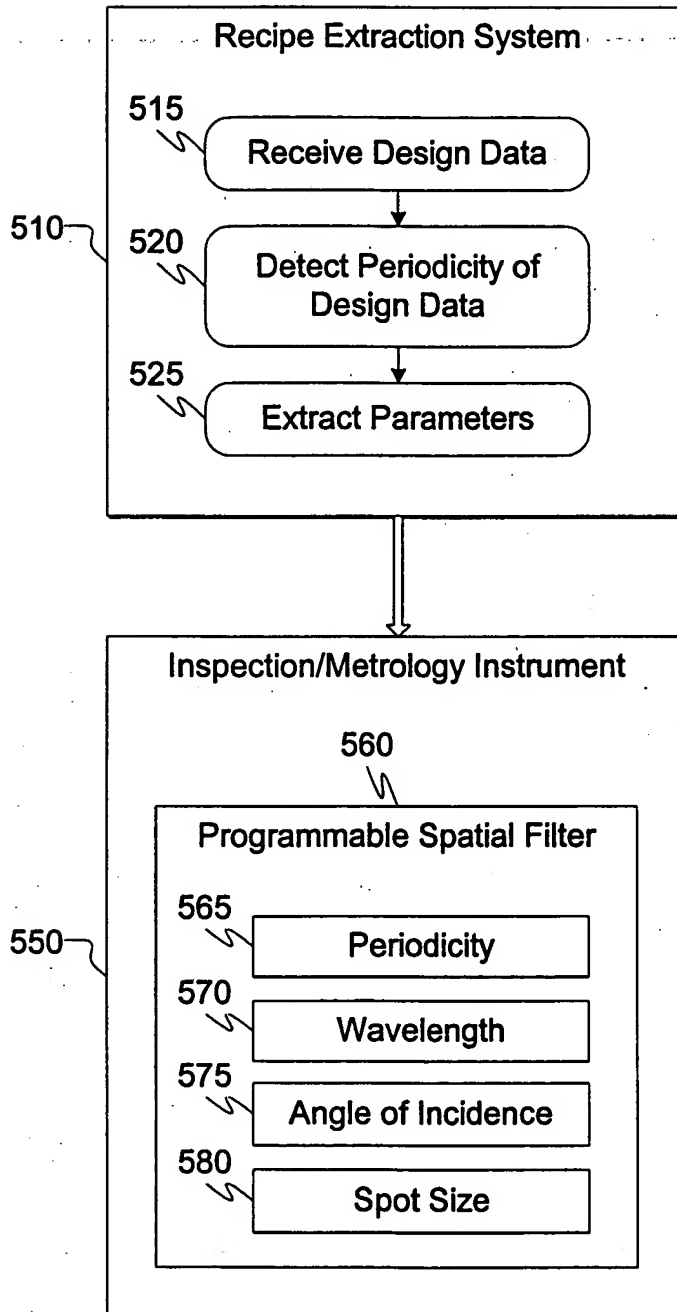


FIG. 5

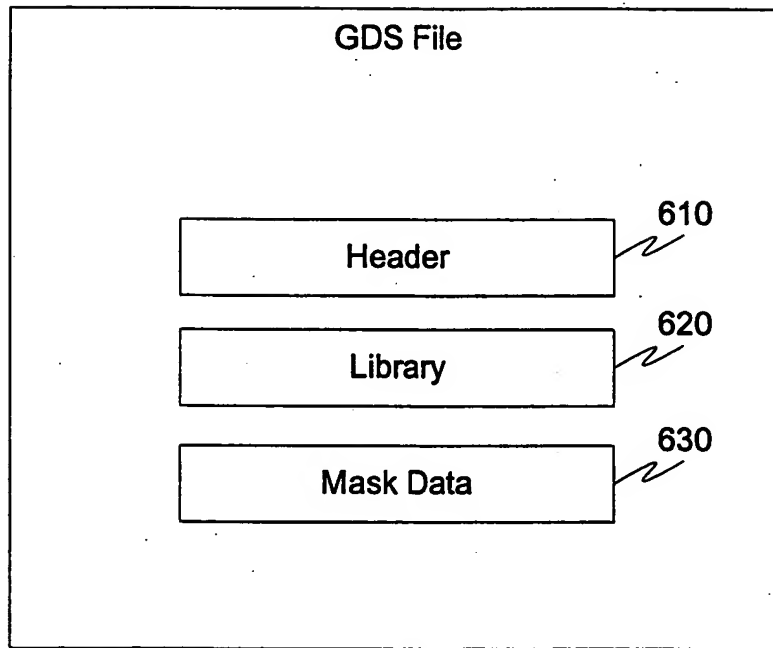


FIG. 6

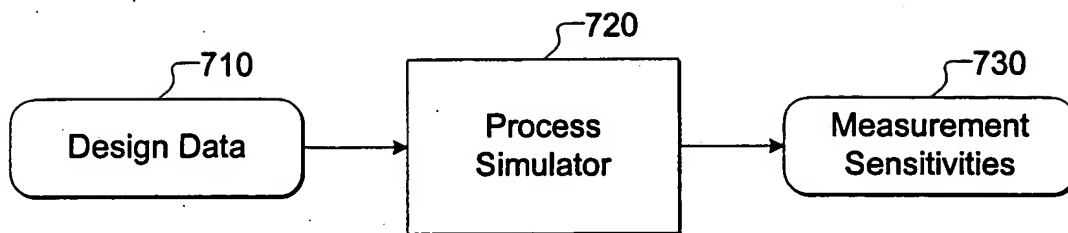


FIG. 7

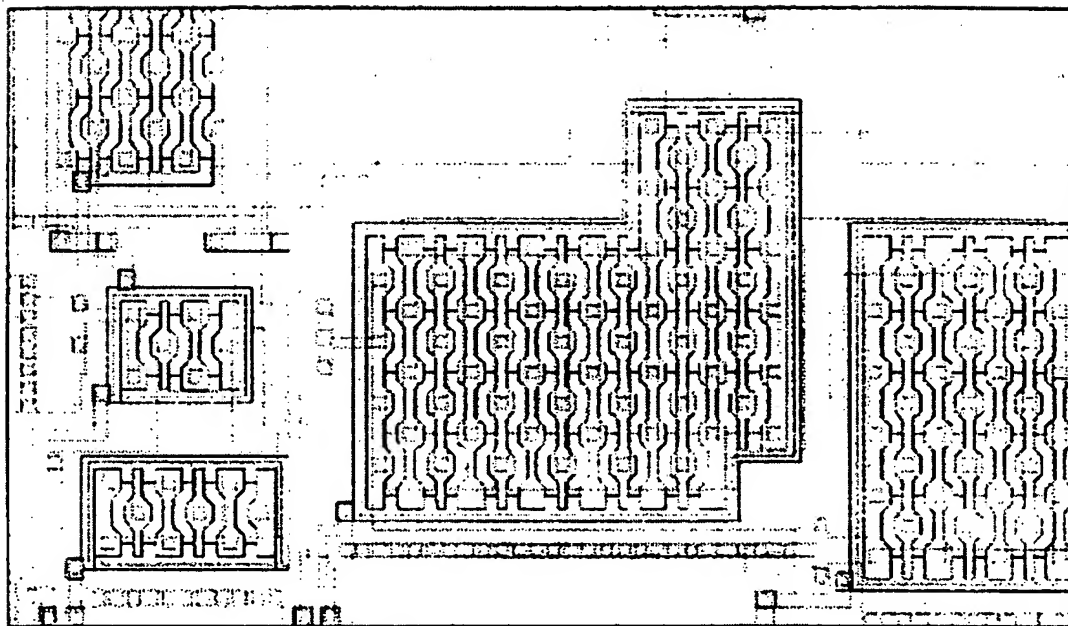


FIG. 8

Overlay Recipe Example

Recipe Item	Overview	Method
Alignment Sites	Look by name for structures from list of known good site types and locate instances at about 3 O'clock and 9 O'clock	<ol style="list-style-type: none"> 1. Search for structure types in GDS file to locate appropriate structures. 2. Determine location of sites relative to die origin. 3. Determine locations on wafer from list of die origins in stepper setup file and offsets from die origin. 4. Choose those closest to 3 and 9 O'clock.
Measurement Sites	Look for overlay measurement sites close to the locations for a 9 site pattern	<ol style="list-style-type: none"> 1. Search for structure types in GDS file to locate appropriate structures. 2. Determine location of sites relative to die origin. 3. Determine locations on wafer from list of die origins in stepper setup file and offsets from die origin. 4. Choose those closest to 9 site pattern locations.
Measurement Info	Determine algorithm based on measurement site type	<ol style="list-style-type: none"> 1. Determine site type by name in GDS file. 2. Use lookup table to determine algorithm.
Target Value	Determine target value from geometry information for measurement site	<ol style="list-style-type: none"> 1. Use geometry information in GDS file to derive target value.

FIG. 9

Overlay Recipe Example

- Meas Sites
- Align Sites

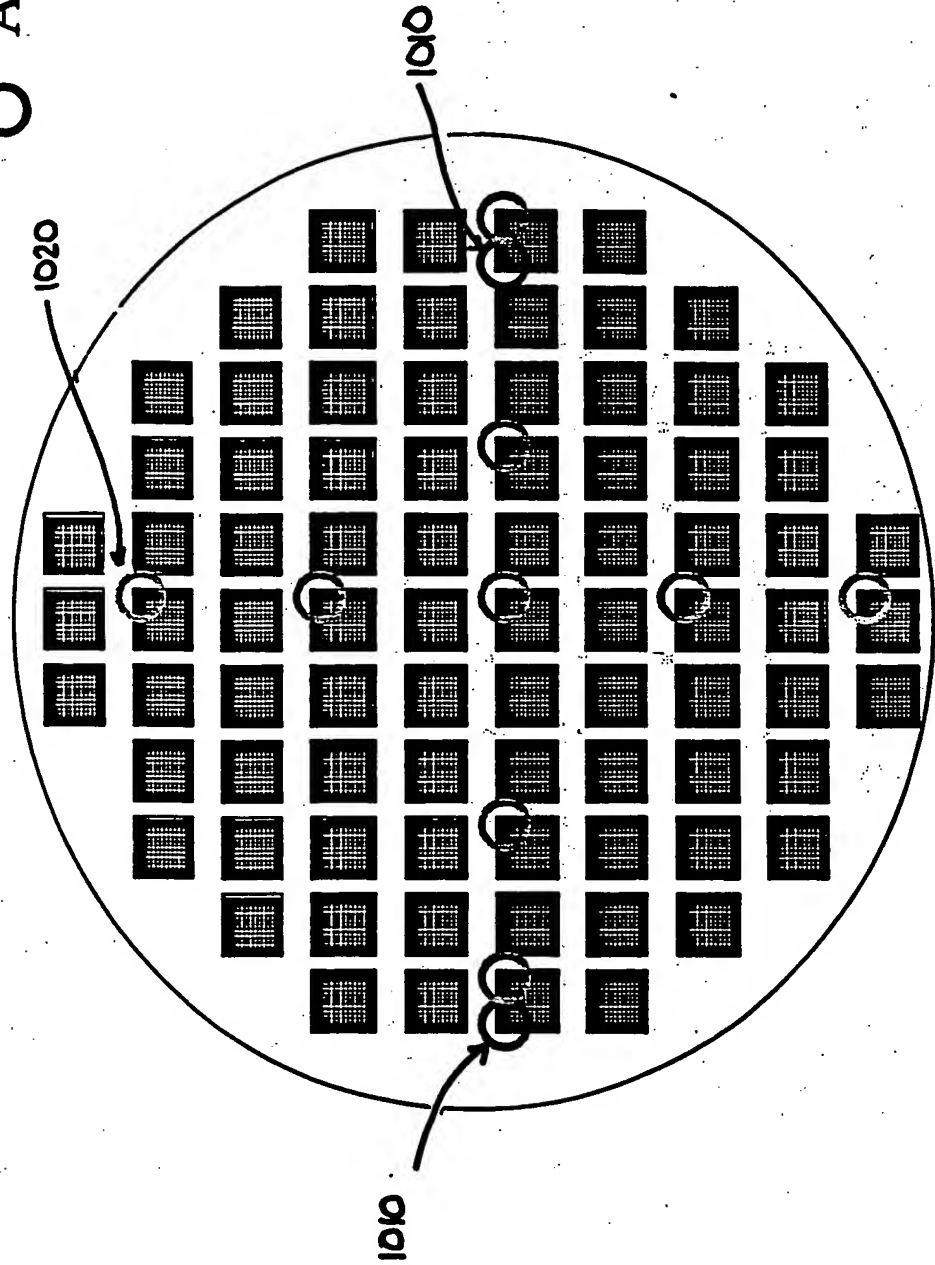


FIG. 10

Inspection Recipe Example

Recipe Item	Overview	Method
Alignment Sites	Look by name for structures from list of known good site types and locate instances at about 3 O'clock and 9 O'clock.	<ol style="list-style-type: none"> Search for structure types in GDS file to locate appropriate structures. Determine location of sites relative to die origin. Determine locations on wafer from list of die origins in stepper setup file and offsets from die origin. Choose those closest to 3 and 9 O'Clock.
Machine setup	Determine appropriate gain and laser power from process level.	<ol style="list-style-type: none"> Determine process level from mask level name. Use lookup table to determine laser power and gain.
Region based thresholding	Identify areas where high sensitivity is possible (such as highly periodic region and open areas) based on the pattern expected on the wafer and set thresholds for that region appropriately. Similarly, estimate the achievable sensitivity for each region of similar makeup.	<ol style="list-style-type: none"> Determine array regions by looking for array statements in GDS file. Determine open areas by generating estimated image on wafer. Set thresholds for these regions appropriately. Duplicate over all die using info from stepper setup file.
PSF (programmable spatial filter in detector fourier plane) setup	Use expected wafer image to generate optimal PSF settings.	<ol style="list-style-type: none"> Generate expected Image on wafer from GDS file. Perform fourier transform on image. Generate PSF pattern settings based on peaks in fourier transform.

FIG. 11

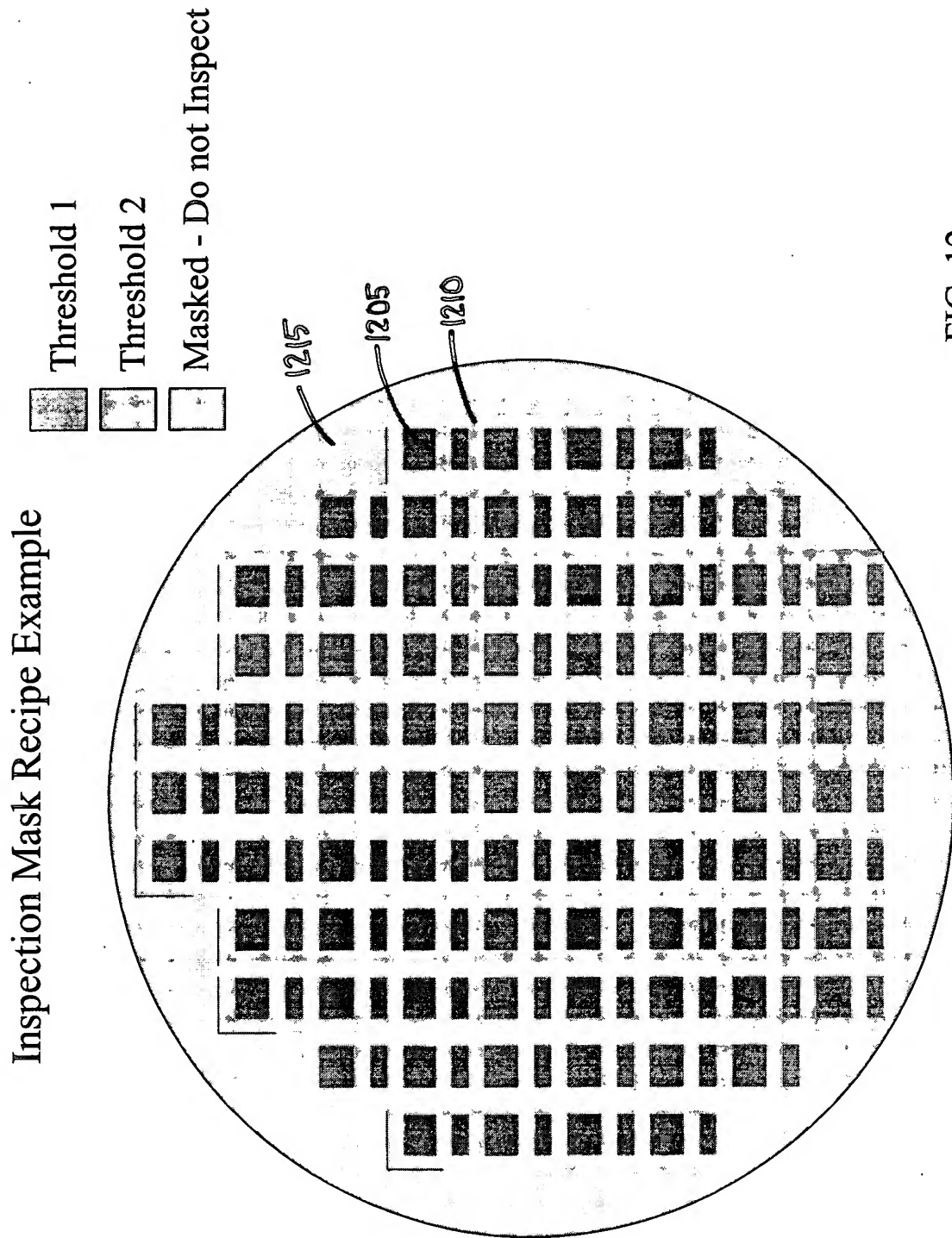


FIG. 12